

REMARKS

STATUS OF CLAIMS

Claims 41-76 are pending. Claims 41, 56, 59, 61 and 62 have been amended. Support for the claim amendments can be found throughout the specification and in the claims as originally filed.

35 U.S.C. §112, SECOND PARAGRAPH REJECTIONS

Claims 41-76 were rejected under 35 U.S.C. §112, second paragraph as allegedly being indefinite. Applicants respectfully traverse.

Claim 41 (from which Claims 42-76 depend) stands rejected for using the phrase “using at least one organic compound monomer as a source to produce a plasma from which the plasma polymer is deposited”. Applicants respectfully submit that one of skill in the art would appreciate the phrase “using at least one monomer as a source to produce a plasma from which the plasma polymer is deposited” to mean that the plasma is produced by at least one monomer and that the plasma is then deposited on the substrate to form a plasma polymer. One of skill in the art would fully appreciate the definiteness of the term based on a reading of the specification. According to MPEP 2173.02, “If the disclosure and claims are sufficient for one skilled in the art to understand, an examiner ‘should not reject claims or insist on their own preferences if other modes of expression selected by applicants satisfy the statutory requirements’.” Also, “It is not necessary that the application describe the claim limitations exactly, but only so clearly that persons of ordinary skill in the art would recognize from the disclosure that applicant’s invention included those limitations.” (See MPEP 2173.02 ad In re Smythe, 480 F.2d 1376, 178 USPQ 179 (CCPA 1973).)

In view thereof, Applicants respectfully submit that the claims, as amended, are in accord with 35 U.S.C. §112.

OBJECTIONS

Applicants note various instances which may require typographical correction. Applicants respectfully submit that these minor typographical errors have been corrected. Correction of these minor typographical errors does not add new matter. Accordingly, Applicants request that these objections be withdrawn.

DOUBLE PATENTING REJECTION

Claims 41-76 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over Claims 85-122 of copending Application No. 10/560,210. In view of the amendment to claim 41 made herein and the recent amendment to Application 10/560,210, Applicants request reconsideration of this rejection.

Applicants' Response to Rejection over Dai and Gengenbach

Claims 41-44, 47, 50, 63, 67 and 75 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by "Surface Modification by Plasma Etching and Plasma Patterning" by Dai et al. (hereinafter "Dai"), or in the alternative, as allegedly being obvious over Dai in view of "A Multi-Technique Study of the Spontaneous Oxidation of n-Hexane Plasma Polymers" by Gengenbach et al. (hereinafter "Gengenbach"). In addition, claims 68-74 and 76 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Dai in view of Gengenbach.

The Examiner alleged that Dai teaches "plasma patterning employing a mask via plasma polymerization (or alternatively via plasma etching), so as to only deposit plasma polymers on surfaces exposed by apertures in the mask." (Office Action, at page 7). The Examiner relied on Gengenbach to incorporate various plasma polymerization techniques in support of the rejection.

As stated in detail above, claim 41 has been amended to further define the invention. In particular, claim 41 has been amended to define the mask plate as "being spaced from the

substrate". The monomer source and/or the substrate are moved relative to one another to provide a non-uniform surface with the mask plate separating the two.

Dai is directed to a surface modification procedure that incorporates "plasma etching" or "plasma polymerization". As discussed on pages 11-12 of the subject specification, Dai is directed to a "stencil" approach and it is the morphology of the substrate that affects the resolution of the plasma pattern. Dai utilizes "mask structures" or grids to form a patterned fashion on the substrate.

The procedure outlined in Dai cannot provide the same type of non-uniform surfaces as the "writing" approach, which is described in the present invention. In the writing approach, the mask plate is spaced apart from the substrate. This allows both the monomer and substrate to be moved relative to each other and to be possibly moved relative to the mask plate. Since they can move relative to each other, the at least one aperture is able to define the features of the monomer on the substrate in such a way as to provide a non-uniform surface on the substrate. As Dai requires "masks" or stencils that are in direct contact with the surface, the surface and monomer source cannot be moved relative to one another. Accordingly, the stencil approach is completely different from the "writing" approach defined by the instant specification.

Gengenbach was merely cited for various plasma polymerization techniques and fails to cure the deficiencies of Dai. It is respectfully submitted that claim 41, and all claims that depend therefrom, are patentable over Dai, alone or in combination with Gengenbach.

Applicants' Response to Rejection under §103(a) over Dai, Gengenbach and Morra

Claims 51, 54-55, 61 and 76 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Dai, in view of Gengenbach and further in view of U.S. Patent No. 5,514,424 to Morra et al.

The Examiner acknowledged that Dai fails to disclose specific categories of monomers, but alleged that Mora discloses “plasma polymer deposition employing fluorocarbon monomers.” (Office Action, at page 12).

As stated in detail above, Dai and Gengenbach fail to disclose all the features of claim 41, as amended here. Morra et al. is directed to a process for reducing the friction coefficient between water and surfaces of polymeric materials. The process involves applying a thin layer of fluorinated polymer. The fluorinated polymer is applied by plasma-reduced polymerization. (See, e.g., col. 2, ll. 39-43.) Variations of the deposited polymer may be achieved by varying the plasma parameters. (See, e.g., col. 3, ll. 60-64). Morra et al. does not disclose or suggest the use of a writing approach, as presently claimed. Rather, Morra et al. relies on variation of the plasma process to obtain changes in the deposited polymer.

As stated above, claim 41 is directed to a method for depositing a plasma polymer onto a substrate by utilizing a “mask plate” and “an aperture”. As set forth in Applicants’ specification, the mask plate is set apart from the substrate and the aperture is used to define features of the deposited plasma, such as the formation of dots or tracks. It is respectfully submitted that claim 41, along with dependent claims 51, 54-55, 61 and 76, are patentable over Dai, alone or in combination with Gengenbach and Mora.

Applicants’ Response to Rejection under §103(a) over Dai, Gengenbach and Renner

Claims 45-46, 53-55, 61, 64-65 and 70 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Dai, in view of Gengenbach and further in view of DD 94657 to Renner et al.

As stated in detail above, Dai and Gengenbach fail to disclose all the features of claim 41, as amended here. Renner et al. is directed to a protective coating which is plasma deposited onto

a magnetic storage medium. At p. 2, second full paragraph, Renner et al. describes the use of plasma polymerization. No use of a writing element or other intervening article is described.

As indicated above, amended claim 41 includes recital of a mask plate. Renner et al. does not disclose or suggest the use of a mask plate. It is respectfully submitted that claim 41, along with dependent claims 45-46, 53-55, 61, 64-65 and 70, are patentable over Dai, alone or in combination with Gengenbach and Renner.

Applicants' Response to Rejection under §103(a) over Dai, Gengenbach, Badyal and Timmons

Claims 48, 50-52, 54-58 and 61 (62) were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Dai, according to Gengenbach and further in view of U.S. Patent No. 6,358,569 to Badyal et al., optionally considering U.S. Patent No. 6,306,506 to Timmons et al.

As stated in detail above, Dai and Gengenbach fail to disclose all the features of claim 41, as amended here. Badyal et al. is directed to a process for applying a film to a body. The process utilizes plasma polymerization. See, e.g., col. 1, ll. 28-56. Badyal et al. does not utilize a mask plate or writing approach as set forth in claim 41. Timmons et al. was alternatively cited for merely disclosing plasma processing techniques and allegedly relevant monomers. However, Timmons et al. also fails to disclose use of a mask plate and aperture for defining features of a monomer. It is respectfully submitted that claim 41, along with dependent claims 48, 50-52, 54-58 and 61 (62), are patentable over Dai, alone or in combination with Gengenbach, Badyal et al. and Timmons et al.

Applicants' Response to Rejection under §103(a) over Dai, Gengenbach and Nomura

Claims 45-46, 48-49, 51, 53-56, 58-61, (62) and 64-66 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Dai, according to Gengenbach and further in view of U.S. Patent No. 5,843,789 to Nomura.

As stated in detail above, Dai and Gengenbach fail to disclose all the features of claim 41, as amended here. Nomura is directed to a process of plasma modification of lumen surface of tubing. As set forth in the Abstract of Nomura, a monomer vapor is entered into tubing which is excited to a plasma state to plasma modify the surface. As discussed above, claim 41 recites the use of a mask plate and writing approach to obtain a non-uniform surface. Nomura has no such provision. It is respectfully submitted that claim 41, along with dependent claims 45-46, 48-49, 51, 53-56, 58-61, (62) and 64-66, are patentable over Dai, alone or in combination with Gengenbach and Nomura.

Applicants' Response to Rejection under §103(a) over Dai, Gengenbach, Muguruma and Timmons

Claims 48, 50-52, 54-58 and 61 (62) were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Dai, according to Gengenbach and further in view of U.S. Patent No. 7,087,149 to Muguruma et al., optionally to Timmons et al.

As stated in detail above, Dai and Gengenbach fail to disclose all the features of claim 41, as amended here. Muguruma et al. was cited for its disclosure of various monomers and a plasma deposition technique. As set forth at col. 12, ll. 10-15, a pre-fabricated mask is used in Muguruma et al. to form a pattern. As discussed at the second full paragraph of p. 6 of Applicants' specification, masks and stencils are known in the prior art. Muguruma et al., however, does not utilize a mask plate or the writing approach as set forth in claim 41. Timmons et al. was alternatively cited for merely disclosing plasma processing techniques and allegedly relevant monomers. However, Timmons et al. also fails to disclose use of a mask plate and aperture for defining features of a monomer. Accordingly, none of the cited references overcome this deficiency.

It is respectfully submitted that claim 41, along with dependent claims 48, 50-52, 54-58 and 61 (62), are patentable over Dai, alone or in combination with Gengenbach, Muguruma et al. and Timmons et al.

Applicants' Response to Rejection under §103(a) over Dai, Gengenbach and Nomura

Claims 45-46, 48-49, 51, 54-56, 58-61, (62) , 64-66 and 76 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Dai, according to Gengenbach and further in view of Nomura.

As stated in detail above, Dai and Gengenbach fail to disclose all the features of claim 41, as amended here. It appears that the Examiner has repeated the same rejection in paragraphs 10 and 12, with the exception that the Examiner has not rejected claim 53 and has included claim 76 in paragraph 12. As claim 76 depends upon claim 41, Applicants respectfully submit that 76 is also patentable over Dai, alone or in combination with Gengenbach and Nomura.

Applicants' Response to Rejection under §103(a) over Dai, Gengenbach and Hu

Claims 45-46, 49, 51, 53-56, 58-61, (62) , 64-66 and 76 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Dai, according to Gengenbach and further in view of U.S. Patent No. 5,463,010 to Hu et al. (hereinafter "Hu").

As stated in detail above, Dai and Gengenbach fail to disclose all the features of claim 41, as amended here. Hu et al. is directed to a hydrocyclosiloxane membrane prepared by plasma polymerization. The plasma polymerization process is described at col. 7, l. 31 – col. 9, l. 53. At col. 8, ll. 51-57, control of various plasma parameters is discussed as controlling the coating process.

As discussed above, claim 41 recites the use of a writing element. Hu et al. does not disclose or suggest the use of a writing element, as set forth in claim 41. It is respectfully submitted that claim 41, along with dependent claims 42-46, 49-51, 53-56, 58-67, 69-72 and 75-77, are patentable over Dai, alone or in combination with Gengenbach and Hu et al.

Applicants' Response to Rejection under §103(a) over Dai, Gengenbach, Yoshimura and Timmons

Claims 48, 52, 54-58 (and 62) were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Dai, according to Gengenbach and further in view of "Guidelines for Preparation of Plasma-Polymer in View of Surface Functionalization of Solid Materials" to Yoshimura et al., optionally considering Timmons et al.

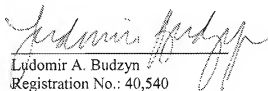
As stated in detail above, Dai and Gengenbach fail to disclose all the features of claim 41, as amended here. Yoshimura was merely cited for disclosing the usefulness of certain compounds and plasma polymerization techniques. Yoshimura, however, does not utilize a writing element as set forth in claim 41. Timmons et al. was again optionally cited for merely disclosing plasma processing techniques and allegedly relevant monomers. However, Timmons et al. also fails to disclose use of a mask plate and aperture for defining features of a monomer. Accordingly, none of the cited references overcome this deficiency.

As discussed above, claim 41 recites the use of a writing element. Yoshimura does not disclose or suggest the use of a mask plate or writing approach, as set forth in claim 41. It is respectfully submitted that claim 41, along with dependent claims 48, 52, 54-58 (and 62), are patentable over Dai, alone or in combination with Gengenbach and Yoshimura, optionally considering Timmons et al..

Applicants: Short et al.
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Favorable action is earnestly solicited. If there are any questions or if additional information is required, the Examiner is respectfully requested to contact Applicants' attorney at the number listed below.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read 'Ludomir A. Budzyn', is written over a horizontal line.

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